

**REMARKS**

Claims 1-48 are pending in the present application. The Office Action of December 30, 2005 includes several objections to the Specification and drawings. In the Office Action mailed December 30, 2005, the Examiner rejected claims 1-48 under 35 U.S.C. §112, first paragraph and second paragraph. Claims 1-48 also stand rejected under 35 U.S.C. §103(a) as being unpatentable over Fukaya (US Pub. 2004/0008009) in view of Carlin et al (USP 5,253,891) and Scott et al. (USP 5,625,276).

**Objections to the drawings**

The Examiner objected to the drawings under 37 C.F.R. §1.83(a) stating that “[t]he drawings must show every feature of the invention specified in the claims” and there “therefore, the ‘sensor’ (claims 31 and 32) must be shown or the feature(s) canceled from the claims.” That which is called in the claims is shown in the drawings as disclosed in the Specification. Claim 31 calls for, in part, a sensor configured to detect a signal indicative of an output delivered by the engine driven power source. As stated in the Specification, “detection circuit/power conditioner circuit 40 operates as a sensor to determine whether the generator 38 is producing enough power for the required output power of the power source.” Specification, ¶[0036]. As shown in Fig. 2, sensor or detection circuit/power conditioner circuit 40 is clearly shown therein. Accordingly, the “sensor” called for in the claims is shown in the drawings as disclosed in the Specification as circuit/conditioner 40.

The Examiner also objected to the drawings under 37 C.F.R. §1.83(a) alleging that “they fail to show ‘voltage’ and ‘power’ detection circuits as described in the specification” and that “[a]ny structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP §608.02(d).” Contrary to the Examiner’s assertion, that which is disclosed in the above-captioned application is shown in the drawings. As shown in Fig. 2, power source 34 includes a detection circuit/power conditioner 40. MPEP §608.02(d) requires that “[a]ny structural detail that is of sufficient importance to be described should be shown in the drawing.” Applicant has done as much. The Examiner’s objection, in light of the enablement rejections addressed below, appears to be a general objection to the entirety of the Application as lacking sufficient specificity. However, contrary to the Examiner’s misgivings, the present Application is in compliance with the rules and laws as cited above.

For example, the Examiner objected to the drawings under 37 C.F.R. §1.83(a) as failing to show “‘voltage’ and ‘power’ detection circuits as described in the specification.” However, 37 C.F.R. §1.83(a) requires that the drawings show every feature of the invention specified in the

claims. As argued above, Applicant's drawings satisfy this requirement. Title 37 C.F.R. §1.83(a) further authorizes that "conventional features disclosed in the description and claims, where their detailed illustration is not essential for a proper understanding of the invention, should be illustrated in the drawing in the form of a graphical drawing symbol or a labeled representation (e.g., a labeled rectangular box)." Applicant has not simply claimed a 'voltage detection circuit' or a 'power detection circuit'. A person of ordinary skill in the power generation art would readily appreciate the modalities applicable to the recited detection/sensing circuits. The objection to the drawings as failing to include a detailed circuit diagram for such components is well beyond the requirement that the drawings show that which is called for in the claims. Even so, that which is called for in the claims is indeed adequately shown in the drawings, as described in sufficient detail in the Specification to enable one skilled in the art to practice the invention.

The Examiner next objected to the drawings under 37 C.F.R. §1.83(b) alleging that "the drawings appear technically not sound" and that "the drawings do not provide for the functionality as it is described in the specification." The Examiner's reliance upon 37 C.F.R. §1.83(b) is misplaced and does not support the reasoning set forth in this objection to the drawings. Title 37 C.F.R. §1.83(b) states that "[w]hen the invention consists of an improvement on an old machine the drawing must when possible exhibit, in one or more views, the improved portion itself, disconnected from the old structure, and also in another view, so much only of the old structure as will suffice to show the connection of the invention therewith." Applicant's invention is not simply an improvement, and such an assertion is unsupported by the application as filed. Each of the claims calls for a plurality of elements and defines the association of those elements. There is no requirement that the drawings alone, without consideration of the Specification, "provide for the functionality" which is described in the Specification. Accordingly, the objection to the drawings as failing to satisfy 37 C.F.R. §1.83(b) is also believed unsupportable. The drawings and the Specification, as executed by the inventors, is technically sound.

The Examiner maintains that "it is not clear, how 'automatic' [sic] function is achieved, how 'sensing' of voltage and/or power is done, how switching between AC and DC outputs is performed, and *many other claimed limitations* are not supported by the drawings." Emphasis added. The drawings do not need to show "automatic" functionality. Further, the objection is incomplete in as much as it alleges that "many other claimed limitations" are not shown in the drawings. The operation of the power sources shown in the figures is clearly disclosed in the twenty-eight (28) pages of Specification which reference the figures. The Examiner's objection

is only supported by an impermissible disregard of the Specification. The drawings of the application do not stand by themselves. They must be reviewed in context of the Specification, as one skilled in the art would interpret them. For example, the Examiner asserted that it is not clear how the automatic function is achieved or how switching between AC and DC outputs is performed. These features are clearly disclosed in the Application with reference to the drawings.

The Specification states that, “[r]eferring to Fig. 2, ..., [w]hen in operation, the engine 36 drives the generator 38 to produce power which is delivered to a detection circuit/power conditioner 40” and that “[t]he detection circuit/power conditioner 40 is in electrical communication with an energy storage device 42.” Specification, ¶[0025]. The Specification further states that “[t]he energy storage device 42 is controlled to provide power to a converter 44, which, in turn, delivers the conditioned power to a current detection circuit/signal circuit 46” and that “**a switch 48** is provided that may be **controlled by a switch controller 50** to deliver power from the engine 36 and generator 38 to an electrical connector 52 or other auxiliary-type outputs (not shown) to deliver a desired power instead of power from the energy storage device 42, which is then charged by the engine 36 and generator 38.” Id. That is, as referenced in the Specification, Fig. 2 includes a switch 48 configured to switch the source of the output power between the energy storage device 42 and the generator 38. Such switch is clearly shown in Fig. 2. It is further disclosed that “[t]herefore, it should be appreciated that together the detection circuit/power conditioner 40, current detection circuit/signal circuit 46, switch control 50, and switch 48 serve as a controller, designated generally by reference numeral 56, which operate to switch a switchable electrical configuration of the power source 34.” Id. Controller 56, labeled in Fig. 2, switches the switchable electrical configuration of the power source. That is, the switchable electrical configuration is switched automatically, or without operator interference, by controller 56. Such is disclosed in the Specification and shown in the drawings as cited. The drawings are compliant with the applicable rules and the Examiner’s objections to the drawings are unsupported by the sections of the MPEP the Examiner relies upon. Accordingly, Applicant respectfully requests that each of the objections to the drawings be withdrawn.

#### Objections to the Specification

The Examiner objected to and requested appropriate correction of paragraph [0025] of the Specification stating that “[t]he words in [0025] ‘switch 48 serve [sic] as a controller, designated generally by reference number 56, which operate [sic] to switch a switchable electrical configuration of the power source 34’ are not understood.” Although Applicant contends that one skilled in the art will readily acknowledge that the invention is enabled, Applicant has amended

the paragraph to clarify that which is stated therein. Applicant believes that which is stated therein is clear and respectfully requests that the objection to the Specification be withdrawn.

Rejections under 35 U.S.C. §112, first paragraph

The Examiner rejected claims 1-48 under 35 U.S.C. §112, first paragraph as failing to comply with the enablement requirement stating that “[t]he claim(s) contains subject matter, which was not described in the specification or shown on the drawings in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.” The Examiner continues, “[f]or example, the drawings and the specification are silent and have insufficient support for the following claimed limitations: ‘automatical’ switching (see claims 1, 5, 8, 10, 15, 18, 22, 30, 48), ‘power indication’ (claim 2), ‘detecting output power’ (claim 5), ‘sensor’ of claim 31 and 43 is not in spec. or drawing, ‘detecting a break’ (claim 33), ‘detecting a voltage drop’ (claim 35), ‘monitoring a power requirement’ (claim 48), etc.”. Emphasis added. Not only does Applicant disagree that one of ordinary skill in the art would not be enabled by the application as filed to practice the claimed invention, but Applicant has not claimed any “automatical” function and the Examiner’s use of etcetera in the rejection is clearly improper and affords no additional basis of rejection.

MPEP §2164.01 states that “[t]he test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with *information known in the art* without undue experimentation” and further provides that “[a] patent need not teach, and preferably omits, what is well known in the art.” §2164.01 (emphasis added). As stated in MPEP §2164 “[a] limitation in and of itself may enable one skilled in the art to make and use the claim containing the limitation.” MPEP §2164.01(a) further requires the consideration of many factors in determining that a disclosure does not satisfy the enablement requirement. “These factors include, but are not limited to: (A) The breadth of the claims; (B) The nature of the invention; (C) The state of the prior art; (D) The level of one of ordinary skill; (E) The level of predictability in the art; (F) The amount of direction provided by the inventor; (G) The existence of working examples; and (H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.” Id. MPEP §2164.01(a) further states that “[i]t is improper to conclude that a disclosure is not enabling based on an analysis of only one of the above factors while ignoring one or more of the others” and that “[t]he examiner’s analysis must consider all the evidence related to each of these factors, and any conclusion of nonenablement must be based on the evidence as a whole.” The Examiner has offered an analysis of only one of these factors to support the rejection of all of the claims as non-enabled.

As stated in MPEP §2164.01(b), “[a]s long as the specification discloses at least one method for making and using the claimed invention that bears a reasonable correlation to the entire scope of the claim, then the enablement requirement of 35 U.S.C. 112 is satisfied.” MPEP §2164.01(b) further states that “[a] specification disclosure which contains a teaching of the manner and process of making and using an invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented **must** be taken as being in compliance with the enablement requirement of 35 U.S.C. 112, first paragraph, unless there is a reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support.” (Emphasis added). The Examiner has provided no such reasoning.

The Examiner alleged that the drawings and Specification are silent or have insufficient support for the claimed limitation of ‘automatic’ switching. Claim 1 calls for, in part, a controller configured to automatically switch a switchable electrical configuration to deliver an output power of the power source from one of: a generator, an energy storage device, and a combination of the generator and the energy storage device. Contrary to the Examiners’ assertion, the Specification states that “the present invention includes a portable power source that includes an energy storage device to supply an output power to a device, ... an engine driven power source, [and] a controller ... that switches an electrical configuration of the power source to selectively deliver power between the energy storage device and/or the engine driven power source.” ¶[0008].

As defined in Merriam-Webster Online Dictionary (courtesy copy enclosed herewith), an automatic process is a process that is commonly understood to be self-acting or self-regulating. That is, a device that is responsive to the demand placed thereon without operator interference with the device. As addressed in the background of the present invention, known power generating devices (much like the devices disclosed in the applied references discussed below) are configured to operate at a given condition regardless of the demand placed thereupon. That is, it is disclosed in the Background of the present Application that it would be desirable to have an on-demand ground power device that matches the power requirements demanded thereof and that does not unnecessarily continuously run the engine of the device. Specification, ¶[0007].

Discussing the automatic switching, the Specification states that “[t]he electrical opening performed by the converter 44 and electrical closing of the switch 48 are performed rapidly and substantially simultaneously such that the power output of the power source 34 as delivered by the electrical connector 52 is uninterrupted and unnoticeable to the user or aircraft/device being

powered” and that “the switching of the components driving power output to the electrical connection 52 occurs such that the operator of the aircraft ground power unit 10 or the aircraft/device receiving power is unaware of the switching and power delivery occurs unimpeded.” Specification, ¶[0038]. That is, the source of the power is automatically switched between sources. To conclude that “automatic switching”, as called for in the claims, is not disclosed in the Application requires a verbatim verbiage word search of the claim terms rather than a reasonable interpretation thereof. Nonetheless, as stated in MPEP §2164.01(b), since the Specification “discloses at least one method for making and using the claimed invention that bears a reasonable correlation to the entire scope of the claim then the enablement requirement of 35 U.S.C. §112 is satisfied.”

The remainder of the Examiners’ rejections proffered as non-enabled elements suffer from the same deficiencies addressed above. For example, the Examiner further alleges that the Application is silent or lacks support for a power indication as called for in claim 2. Claim 2 calls for, in part, that the controller is configured to only switch the switchable electrical configuration of the power source to provide the output power of the power source from the generator upon detection of a power indication of the energy storage device falling below a predetermined threshold.

Referring to Fig. 2, the Specification states that “power delivery to the electrical connector 52 continues from the energy storage device 42 until the energy storage device is depleted below a threshold voltage, current, or power level” and that “once the current detection circuit/signal circuit 46 senses current drawn from the energy storage device 42, the current detection circuit/signal circuit 46 begins monitoring the output of the energy storage device 42 to determine whether the output drops below a given threshold, which indicates that the energy storage device 42 may soon not be able to continue power output as required by the associated aircraft or other device being powered by the power source 34.” Specification, ¶[0028]. Understandably, if the Examiner simply conducted a word search of the Application, it may not yield the term “power indication” per se, however, the portions of the Specification cited above clearly enable the subject matter alleged by the Examiner as not being mentioned therein. There is no ipse verbis test for claim terms to establish enablement. For the Examiner to conclude that the claims are not enabled by an ipse verbis test, is unsupported by the MPEP as cited above. Although the verbatim term used in the claim is not used in the Specification, the subject matter of that term is clearly disclosed and enabled in the cited portions of the Specification.

For expediency, Applicant will herein simply direct the Examiner's attention to the most relevant portions of the Specification for those elements the Examiner has alleged as not disclosed or insufficiently supported therein. Detecting output power as called for in claim 5 is enabled in ¶[0031], the sensor called for in claims 31 and 32 is enabled in ¶[0028], detecting a break called for in claim 33 is enabled in ¶¶[0039] through [0041], detecting a voltage drop as called for in claim 35 is enabled in ¶[0042], and monitoring a power requirement as called for in claim 48 is enabled in ¶[0037]. Applicant's citations to the relevant portions of the Application are merely for the Examiner's convenience. Understandably, the cited sections are interrelated to the entirety of the Application and the figures. There is no requirement that the exact wording of the claims be reproduced in the Application. One of ordinary skill in the art would be readily able to make and/or use the claimed invention from even a cursory review of the Application. Accordingly, at least for the reasons set forth above, Applicant believes that the claims of the present Application are in compliance with 35 U.S.C. §112, first paragraph as set forth and expanded upon in the MPEP.

Rejections under 35 U.S.C. §112, second paragraph

The Examiner next rejected claims 1-48 under 35 U.S.C. §112, second paragraph as being indefinite stating that "claims 1, 5, 8, 10, 15, 18, 22, 30, and 48 recite the limitation 'automatic'" and that "there is insufficient antecedent basis for this limitation in the claims." None of these claims recite the term "automatic". These claims call for a device which performs certain operations automatically or without operator interference. Applicant believes that this subject matter has been fully addressed above. Nonetheless, as the claims do not include that which the Examiner alleges is indefinite, Applicant respectfully requests that the rejection thereto be withdrawn.

The Examiner rejected claim 3 as containing a grammatical error. Applicant has amended claim 3 to improve the readability thereof. The remainder of the rejections premised on 35 U.S.C. §112, second paragraph appear to not be applicable, or are not in accordance with examining procedure. For example, claim 4 calls for, in part, an "engine configured to begin operation to charge the energy storage device upon energy depletion of the energy storage device below a threshold." The Examiner alleged that there is insufficient antecedent basis for the limitation "energy depletion of the storage device". As required by MPEP §2173.02 "[i]n reviewing a claim for compliance with 35 U.S.C. 112, second paragraph, the examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. 112, second

paragraph, by providing clear warning to others as to what constitutes infringement of the patent.” The claim limitations cited by the Examiner are only indefinite when, as done by the Examiner, the limitations are removed from the context of the claims.

MPEP §2173.05(e) states that “the failure to provide explicit antecedent basis for terms does not always render a claim indefinite” and that “[i]f the scope of a claim would be reasonably ascertainable by those *skilled in the art*, then the claim is not indefinite.” MPEP §2173.05(e) (emphasis added). The section further states that “[t]here is no requirement that the words in the claim must match those used in the specification disclosure” and that “Applicants are given a great deal of latitude in how they choose to define their invention so long as the terms and phrases used define the invention with a *reasonable degree of clarity and precision*.” MPEP §2173.05(e) (emphasis added). Applicant has merely done what is expressly authorized by the MPEP. Several of the rejections under 35 U.S.C. §112, second paragraph appear to simply be the Examiner’s objection to the claiming of a functional limitation. As stated in MPEP §2173.05(g), “[t]here is nothing inherently wrong with defining some part of an invention in functional terms. Functional language does not, in and of itself, render a claim improper.” As the claims clearly set forth and associate a plurality of elements, the claims satisfy the notice function of §112, second paragraph and are believed to be compliant therewith. Accordingly, Applicant requests that the §112, second paragraph rejections be withdrawn.

#### Prior art rejections

The Examiner rejected all pending claims (1-48) under 35 U.S.C. §103(a) as being unpatentable over Fukaya in view of Carlin et al. and further in view of Scott et al. Applicant respectfully disagrees.

The burden of establishing a *prima facie* case of obviousness falls on the Examiner. MPEP §2143 requires that to establish a *prima facie* case of obviousness, three basic criteria must be met including that the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP §2141. As argued below, the art of record does not teach or suggest each and every element called for in the present claims. Accordingly, the Examiner has failed to establish a *prima facie* obviousness rejection. Applicant believes the claims as presented herein are patentably distinct over the art of record.

The Examiner summarizes the 26 figures and 172 paragraphs of Fukaya stating that “as far as they can be understood, applicant’s claims reads [sic] on Fukaya, who teaches a portable power supply device with engine driven generator, a battery as a power storage source, a rectifier and inverter, and controls, which provide one or both of power sources to the load and have



automatical functions for battery charging, switching, sensing and monitoring, essentially as in applicant's claims [] [b]ut Fukaya fails to apply his apparatus for aircraft powering and to provide DC output on demand." For the Examiner's convenience, Applicant has provided the citations to the body of Fukaya which support Applicant's position that Fukaya does not disclose, teach, or even suggest that which the Examiner alleges is contained therein.

Applicant does not necessarily disagree that Fukaya discloses a portable power supply which includes an engine powered power source, a switching feature, and some automatic functions; however, that is not what is called for in the present claims. Claim 1 calls for, in part, a switchable electrical configuration arranged to switch delivery of output power between the generator and the energy storage device and a controller configured to automatically switch the switchable electrical configuration to deliver the output power of the power source from one of: the generator, the energy storage device, and a combination of the generator and the energy storage device. That is, the power source according to claim 1 is constructed to deliver power from one of the energy storage device, the engine powered power source, or a combination thereof. Claim 1 further calls for the automatic switching between these sources of power. As described in the Specification, such a construction provides a power source that is *automatically responsive to the demands placed thereon*. Such a power source is not taught or suggested by the combination of references.

Fukaya describes a plurality of operating modes of the power source disclosed therein. ¶¶[0094-0107]. Fukaya repeatedly states that, depending on the output or mode of operation desired, "the operator" configures a plurality of switches to define the operating mode of the power source. Id. The only automatic operating mode is disclosed in paragraphs [0104] through [0107]. The "automatic power-up mode" of Fukaya is substantially different than the claimed invention. First, for the device of Fukaya to even operate in the "automatic power-up mode", as disclosed in paragraphs [0095], [0097], [0099], [0101], and [0103], an operator must configure a plurality of switches to configure the operation of the power supply thereof. For example, Fukaya states that, for a power-up mode, "if the operator wants to use a load device that requires a relatively large power that can exceed the rated current, the operator sets the normal/power-up mode selection switch 38 on." ¶[0103]. That is, for the device to determine which of engine generated and battery generated power is to be utilized, the operator, and not the device, configures a plurality of switches to connect the output to the desired input. Fukaya further states that, during power-up mode, "the output from generator 22 ... and the output from the DC/DC converter 34 are both supplied to the inverter" such that "the power converting unit 26 outputs the

full power to the load device.” Id. Fukaya further states that “Preferably, the engine 12 operates at various engine speeds in response to the load current sensor 70 regardless of whether the normal/economy mode selection switch 36 is turned on or is turned off.” Id. That is, rather than automatically switching the source of power between the engine driven generator and the energy storage device, Fukaya teaches automatically manipulating the operating speed of the engine to satisfy demand. This is not what is called for in claim 1.

Claim 1 calls for, in part, a controller configured to automatically switch an electrical configuration arranged to switch delivery of output power between a generator and an energy storage device to deliver an output power of the power source from one of a generator, an energy storage device, and a combination of the generator and the energy storage device. The system of Fukaya is incapable of such operation. Fukaya teaches that the operator must configure the machine to deliver an anticipated output, and only when the operator configures the device to support a load that is greater than the set capability of the device, does the device automatically combine the outputs of the energy storage device and the engine powered generator. That is, the operator has already determined that the device should provide the “power-up mode” and configures the “switches” to provide this output. When a load is connected to the output that is greater than the load which the engine driven generator can support, the output of the energy storage device is combined therewith. This is not what is called for in claim 1. Claim 1 calls for a device configured to automatically switch between the engine driven generator and the energy storage device. There is no such automatic switching disclosed or suggested in Fukaya. Simply, Fukaya teaches a system wherein, when an operator configures the machine to output full engine driven generator power, the speed of the engine, as well as the additional output of the energy storage device, can be combined therewith to satisfy the load. Claim 1 calls for a power source which automatically switches the electrical configuration between the engine driven generator and the energy storage device. The system of Fukaya teaches manual configuration of the device and only when the device is manually configured for power-up mode does the device provide automatic engine control in response to excess demand. The addition of Carlin et al. and Scott et al. do not overcome this shortfall.

The Examiner states that “Carlin et al. shows aircraft power supply housing exactly as applicant’s, and Scott et al. teaches a portable power supply unit, which can generate a plurality of regulated DC and AC voltages (see col. 2, lns. 61-63).” Although Carlin et al. does not show an aircraft power supply housing “exactly as applicant’s”—note the interlock mechanism 50 which is the claimed subject matter of Carlin et al, Applicant does not find it peculiar that Fig. 1

of Carlin et al. is substantially similar to Applicants Fig. 1 as the assignees of these matters are legally associated. Notwithstanding the similarities in the figures of the reference, there is no disclosure in Carlin et al. for providing an electrical output with anything but the engine powered generator. Specifically, Carlin et al. states that the “ground unit is representative of ground power units that are used on airports, and each typically includes a wheeled chassis 15 on which an engine driven motor-generator 20 is mounted.” Col. 2, ln.68 to col. 3, ln. 3. That is, there is no teaching or suggestion in Carlin et al. for providing an aircraft ground support power source with an output that is generated from anything but an engine powered generator. The operation of this type of device is addressed in the Background of the present application.

The actual disclosure of Scott et al. is much more problematic to the Examiner’s reliance thereon. The Examiner alleges that “Scott et al. teaches a portable power supply unit, which can generate a plurality of regulated DC and AC voltages (see column 2, lines 61-63.)” Although Applicant appreciates the Examiner’s citation to three lines of the fifty-six columns of Scott et al., the Examiner’s statement removes the citation from the context of Scott et al. Scott et al. discloses a controller for a permanent magnet generator. *See* Title. The generator includes multiple windings which are isolated to provide a desired output. Regardless of which winding provides the desired output, to generate any output, the generator must be powered by an engine. There is no disclosure in Scott et al. for generating any output from a source other than the engine powered generator. Furthermore, the subject matter of Scott et al. appears to be directed to the same subject matter as Fukaya. That is, when a less than maximum output load is desired, Scott et al. discloses isolating the windings of the generator to allow reduction of the engine operation speed.

Scott et al. states that “control circuit 16 suitably activates and deactivates each of various windings 400 to achieve the desired output or temperature.” Col. 8, lns.15-17. Scott et al. continues, “For example, if signals from voltage sensor 700 indicate that system 10 output voltage is below the desired voltage, control circuit 16 activates more windings 400, thus adding the current generated by other windings 400 and raising the overall current and voltage to the desired level.” Col. 8, lns. 21. Scott et al. states that “conversely, if too much current is being produced or if the voltage is too high, one or more windings 400 may be deactivated to reduce the number of windings 400 supplying load 15.” Col. 8, lns. 22-25. That is, depending on satisfaction of the load, windings are activated and/or deactivated. Regardless of the number of windings activated, all of the output power is generated by the engine driven generator. Assuming *arguendo* that the art of record includes the requisite motivation to combine the

references in the manner done by the Examiner, the actual combination of these references do not actually teach and/or suggest that which is called for in claim 1. Accordingly, Applicant believes claim 1, and the claims that depend therefrom, are patentably distinct over the art of record.

The Examiner next rejected claim 18 under 35 U.S.C. §103(a) with the same general statement with respect to the art of record as applied to reject claim 1. The Examiner's rejection of claim 18 suffers from the same deficiencies as the rejection of claim 1. Claim 18 defines a method of providing remote power which includes, in part, upon an energy level of the energy storage device reaching a lower threshold, automatically switching the power delivery from the energy storage device to the fossil fuel engine driven power source. As argued above with respect to claim 1, such a power source is not taught or suggested in the art of record. Fukaya teaches a power system wherein the operator must configure a plurality of switches to configure the power source to deliver a desired output. ¶¶[0092-0106]. The only automatic mode of operation combines the output of the energy storage device and the engine driven generator. ¶¶[0104-0106]. During the automatic operating mode, the energy of the storage device is continually provided while the operational speed of the engine driven generator is adjusted to provide the desired output. ¶[0106]. This is not what is called for in claim 18. Likewise, Scott et al. and Carlin et al. both teach engine driven power systems. Claim 18 calls for a system wherein the engine driven generator power is utilized automatically upon the energy level of an energy storage device reaching a lower threshold. Such a system is not taught or suggested in the art of record. Accordingly, Applicant believes claim 18, and the claims that depend therefrom, are patentably distinct over the art of record.

The Examiner also rejected claim 25 under 35 §103(a) as being unpatentable over Fukaya in view of Carlin et al. and Scott et al. Applicant has amended claim 25 to further define that which is called for therein. As amended, claim 25 calls for, in part, an energy storage device connected to an engine driven power source and configured to automatically and directly power an idle aircraft alternately with the engine driven power source. That is, the aircraft ground power apparatus includes an energy storage device that is configured to directly power an idle aircraft independent of operation of the engine driven power source and does so automatically or without operator interference. Scott et al. and Carlin et al. teach devices which generate the desired output only from engine operation. There is no disclosure in either of these references to provide an output power from anything other than the engine powered generator. Although Fukaya discloses a device having an energy storage device which provides the input power to generate the output power, Fukaya is also clear that an operator must configure the power source

to provide such an output. That is, Fukaya suffers from the same drawbacks addressed in the Background of the present application. An operator must know the demand that will be placed on the machine and configure the machine for “Quiet Operation Mode” based on this expectation. If the load demand exceeds the power that can provided by the energy storage device, the operator must be readily available to reconfigure the power source for engine operation or engine and energy storage device operation. Accordingly, that which is called for in claim 25 is not taught, nor even suggested in the art of record. As such, Applicant believes claim 25, and the claims that depend therefrom, are patentably distinct over the art of record.

The Examiner rejected claim 39 under 35 U.S.C. §103(a) as being unpatentable over Fukaya in view of Carlin et al. and Scott et al. Applicant has amended claim 39 to further define that which is called for therein. As amended, claim 39 calls for, in part, a switch controller switchably connected to the generator and the energy storage device and configured to connect the generator to power the aircraft after the given duration. As cited above, such a switch controller is disclosed in paragraph [0025] of the Specification. Furthermore, as argued above with respect to claims 1, 18, and 25, the art of record does not teach or suggest a power device capable of such operation or control. That is, Scott et al. and Carlin et al. both lack any disclosure where an energy storage device provides an output power as called for in claim 39. Fukaya discloses a device wherein an operator must select the mode of operation of the device. There is no disclosure in Fukaya that the energy storage device provides the output for a given duration or that a switchable controller connects the generator to power the aircraft after the given duration. Accordingly, that which is called for in claim 39 is not taught or suggested in the art of record. As such, Applicant believes claim 39, and the claims that depend therefrom, are patentably distinct over the art of record.

The Examiner next rejected claim 45 under 35 U.S.C. §103(a) as being unpatentable of Fukaya in view of Carlin et al. and further in view of Scott et al. Applicant has amended claim 45 to further define that which is called for therein. As amended, claim 45 calls for a method of providing aircraft ground power which includes powering an aircraft from an energy storage device of an aircraft ground power unit, detecting a load to be supported, and automatically powering the aircraft from a generator of the aircraft ground power unit alternately with the energy storage device based on the detected load. The art of record, alone or in combination, does not teach or suggest a method of powering a load as defined in claim 45. That is, Fukaya, the only reference which suggests powering a load with an energy storage device, requires (1) that the operator configure the power source to provide the desired output and (2) that the desired

output is provided from the energy storage device of the combined output of the engine driven generator and the energy storage device. Fukaya does not teach or suggest detecting a load to be supported, or automatically alternately powering the load with an energy storage device, or an engine driven generator. That is, Fukaya discloses the combination of the engine and energy storage device outputs and does not disclose alternating the source of the output power as called for in claim 45. Accordingly, that which is called for in claim 45 is not taught or suggested in the art of record. As such, Applicant believes claim 45, and the claims that depend therefrom, are clearly patentably distinct over the art of record.

Therefore, in light of at least the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1-48.

Applicant appreciates the Examiner's consideration of these Amendments and Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

Respectfully submitted,

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Attorney Docket No.: ITW7510.096

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## ELECTRONIC INFORMATION DISCLOSURE STATEMENT

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Title of Invention	FUEL SAVING ENGINE DRIVEN AIRCRAFT GROUND POWER DEVICE AND METHOD OF USE						
Application Number:		10/709836					
Confirmation Number:		3835					
First Named Applicant:		Bruce Albrecht					
Attorney Docket Number:		ITW7510.096					
Search string:		( 4315163 or 5253891 or 6472846 or 6700214 or 3665495 or 5198698 or 6700802 ).pn.					
US Patent Documents		AU-2834					
Note: Applicant is not required to submit a paper copy of cited US Patent Documents							
init	Cite.No.	Patent No.	Date	Patentee	Kind	Class	Subclass
<input checked="" type="checkbox"/>	1	4315163	1982-02-09	Bienville			
<input checked="" type="checkbox"/>	2	5253891	1993-10-19	Carlin et al.			
<input type="checkbox"/>	3	6472846	2002-10-29	Hutchinson et al.	B1		
<input type="checkbox"/>	4	6700214	2004-03-02	Ulinski et al.	B2		
<input checked="" type="checkbox"/>	5	3665495	1972-05-23	Carter et al.			
<input checked="" type="checkbox"/>	6	5198698	1993-03-30	Paul et al.			
<input checked="" type="checkbox"/>	7	6700802	2004-03-02	Ulinski et al.	B2		
Remarks							
Note: Remarks are not for responding to an office action.							
The Examiner may find the following patent application relevant: 10/709,835							
Signature							
Examiner Name				Date			
				12-22-05			

APP\_ID=10709836

Docketed by: dlc  
Date: 1-3-06


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**automatic**

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
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**automatic**

[Britannica](#)

**Main Entry:** <sup>1</sup>**au-to-mat-ic** 

**Pronunciation:** "o-t&- 'ma-tik

**Function:** *adjective*


**Etymology:** Greek *automatos* self-acting, from *aut-* + *-matos* (akin to Latin *ment-*, *mens* mind) -- more at **MIND**


**1 a :** largely or wholly involuntary; *especially* : **REFLEX** 5  
 <*automatic* blinking of the eyelids> **b :** acting or done spontaneously or unconsciously **c :** done or produced as if by machine : **MECHANICAL** <the answers were *automatic*>

**2 :** having a self-acting or self-regulating mechanism

**3 of a firearm :** using either gas pressure or force of recoil and mechanical spring action for repeatedly ejecting the empty cartridge shell, introducing a new cartridge, and firing it

**synonym** see SPONTANEOUS

**- au-to-mat-i-cally**  /-ti-k(ə-)lē/ *adverb*

**- au-to-mat-i-ty**  /-mə-'ti-s&-tē, -mə-/ *noun*

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